AMENDMENT TO CLAIMS:

1. (Cancelled)

2. (Cancelled)

3. (Currently Amended) A method for increasing the specific activity of an E1 endoglucanase containing a glycosyl hydrolase site to form a mutated glycosyl hydrolase for use on a cellulose substrate relative to an unmutated form of the glycosyl hydrolase site, comprising: replacing an active site glycosyl-stabilizing amino acid of the hydrolase with an amino acid, ~~the replacing amino acid binding~~ that binds cellobiose less tightly than the glycosyl-stabilizing amino acid to provide a mutant glycosyl hydrolase~~.~~, said glycosyl-stabilizing amino acid is selected from the group consisting of tryptophan, phenylalanine, and tyrosine, ~~and tyrosine~~ and said replacing amino acid is selected from the group consisting of alanine, valine, serine, glutamic acid, arginine and glycine~~.~~; wherein said active or mutant site is selected from tryptophan 30, 39, 171, 181, 212 and 259; phenylalanine 229 and 258; and tyrosine 245.

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Currently Amended) The method of claim-3, wherein the mutant glycosyl hydrolase is selected from the group consisting of:

~~GCGGGCGGCGGCTATTGGCACACGAGCGGCCGGGAGATCCTGGACGCGAACAACGT GCCGGTACGGATCGCCGGCATCAACTGGTTTGGGTTCGAAACCTGCAATTACGTCGT GCACGGTCTCTGGTCACGCGACTACCGCAGCATGCTCGACCAGATAAAGTCGCTCGG CTACAACACAATCCGGCTGCCGTACTCTGACGACATTCTCAAGCCGGGCACCATGCC~~

~~GAACAGCATCAATTTTTACCAGATGAATCAGGACCTGCAGGGTCTGACGTCCTTGCA~~
~~GGTCATGGACAAAATCGTCGCGTACGCCGGTCAGATCGGCGCTGCGCATCATTCTTGA~~
~~CCGCCACCGACCGGATTGCAGCGGCGCAGTCGGCGCTGTGGTACACGAGCAGCGTCT~~
~~CGGAGGCTACGTGGATTTCCGACCTGCAAGCGCTGGCGCAGCGCTACAAGGGAAAC~~
~~CCGACGGTCGTCGGCTTTGACTTGCACAACGAGCCGCATGACCCCGGCCTGCTGGGGC~~
~~TGCGGCGATCCGAGCATCGACTGGCGATTGGCCGCCGAGCGGGCCGGAAACGCCGT~~
~~GCTCTCGGTGAATCCGAACCTGCTCATTTTCGTCGAAGGTGTGCAGAGCTACAACGG~~
~~AGACTCCTACTGGTGGGGCGGCAACCTGCAAGGAGCCGGCCAGTACCCGGTCGTGC~~
~~TGAACGTGCCGAACCGCCTGGTGTACTCGGCGCACGACTACGCGACGAGCGTCGGC~~
~~CCGCAGACGTGGTTCAGCGATCCGACGTTCCCCAACAAGATGCCCGGCATCTGGAAC~~
~~AAGAACTGGGGATACCTCTTCAATCAGAACATTGCACCGGTATGGCTGGGCGAATTC~~
~~GGTACGACACTGCAATCCACGACCGACCAGACGTGGCTGAAGACGCTCGTCGAGTA~~
~~CCTACGGCCGACCGCGCAATACGGTGCGGACAGCTTCCAGTGGACGTTCTGGTCCTG~~
~~GAACCCCGATTCCGGCGACACAGGAGGAATTCTCAAGGATGACTGGCAGACGGTCG~~
~~ACACAGTAAAAGACGGCTATCTCGCGCCGATCAAGTCGTCGATTTTCGATCGTGTCT~~
~~AATGAATCGCCTAGCAGTCAACCGTCCCCGTCGGTGTCGCCGTCTCCGTCGCCGAGC~~
~~CCGTCGGCGAGTCGGACGCCGACGCCTACTCCGACGCCGACAGCCAGCCCCGACGCC~~
~~AACGCTGACCCCTACTGCTACGCCCACGCCCACGGCAAGCCCCGACGCCCGTCACCGA~~
~~CGGCAGCCTCCGGAGCCCCGCTGCACCGCGAGTTACCAGGTCAACAGCGATTGGCGC~~
~~AAT,~~

GCGGGCGGCGGCTATTGGCACACGAGCGGCCGGGAGATCCTGGACGCGAACAACGT

GCCGGTACGGATCGCCCGGCATCAACTGGTTTGGGTTCGAAACCTGCAATTACGTCGT

GCACGGTCTCCGGTCACGCGACTACCGCAGCATGCTCGACCAGATAAAGTCGCTCG

GCTACAACACAATCCGGCTGCCGTACTCTGACGACATTCTCAAGCCGGGCACCATGC

CGAACAGGATCAATTTTTACCAGATGAATCAGGACCTGCAGGGTCTGACGTCCTTGC

AGGTCATGGACAAAATCGTCGCGTACGCCGGTCAGATCGGCCTGCGCATCATTCTTG

ACCGCCACCGACCGGATTGCAGCGGGCAGTCGGCGCTGTGGTACACGAGCAGCGTC

TCGGAGGCTACGTGGATTTCCGACCTGCAAGCGCTGGCGCAGCGCTACAAGGGAAA

CCCGACGGTCGTCGGCTTTGACTTGCACAACGAGCCGCATGACCCGGCCTGCTGGGG

CTGCGGCGATCCGAGCATCGACTGGCGATTGGCCGCCGAGCGGGCCGGAAACGCCG

TGCTCTCGGTGAATCCGAACCTGCTCATTTTCGTCGAAGGTGTGCAGAGCTACAACG

GAGACTCCTACTGGTGGGGCGGCAACCTGCAAGGAGCCGGCCAGTACCCGGTCGTG

CTGAACGTGCCGAACCGCCTGGTGTACTCGGCGCACGACTACGCGACGAGCGTCTA

CCCGCAGACGTGGTTCAGCGATCCGACCTTCCCCAACAACATGCCCGGCATCTGGAA

CAAGAACTGGGGATACCTCTTCAATCAGAACATTGCACCGGTATGGCTGGGCGAATT

CGGTACGACACTGCAATCCACGACCGACGAGACGTGGCTGAAGACGCTCGTCCAGT

ACCTACGGCCGACCGCGGCAATACGGTGCGGACAGCTTCCAGTGGACCTTCTGGTCCT

GGAACCCCGATTCCGGCGACACAGGAGGAATTCTCAAGGATGACTGGCAGACGGTC

GACACAGTAAAAGACGGCTATCTGGCGCCGATCAAGTCGTCGATTTTCGATCGTGTC

TAATGAATCGCGTAGCAGTCAACCGTCCCCGTCGGTGTCGCCGTCTCCGTCGCCGAG

CCCGTCGGCGAGTCGGACGCCGACGCCTACTCCGACGCCGACAGCCAGCCCGACGC

CAACGCTGACCCCTACTGCTACGCCCACGCCCACGGCAAGCCCGACGCCGTCACCG

ACGGCAGCCTCCGGAGCCCGCTGCACCGCGAGTTACCAGGTCAACAGCGATTGGGG

~~CAATGGCTTCACGGTAACGGTGGCCGTGACAAATTCCG, and~~

~~GCGGGCGGCGGCTATTGGCACACGAGCGGCCGGGAGATCCTGGACGCGAACAACGT~~
~~GCCGGTACGGATCGCCGGCATCAACTGGTTTGGGTTCGAAACCTGCAATTACGTCGT~~
~~GCACGGTCTCTGGTCACGCGACTACCGCAGCATGCTCGACCAGATAAAGTCGCTCGG~~
~~CTACAACACAATCCGGCTGCCGTACTCTGACGACATTCTCAAGCCGGGCACCATGCC~~
~~GAACAGCATCAATTTTCGGCAGATGAATCAGGACCTGCAGGGTCTGACGTCCTTGCA~~
~~GGTCATGGACAAAATCGTCGCGTACGCCGGTCAGATCGGCCTGCGCATCATTGTTGA~~
~~CCGCCACCGACCGGATTGCAGCGGGCAGTCGGCGCTGTGGTACACGAGGAGCGTCT~~
~~CGGAGGCTACGTGGATTTCCGACCTGCAAGCGCTGGCGCAGCGCTACAAGGGAAAC~~
~~CCGACGGTCGTCGGCTTTGACTTGCACAACGAGCCGCATGACCCGGCCTGCTGGGGC~~
~~TGCGGCGATCCGAGCATCGACTGGCGATTGGCCGCCGAGCGGGCCGGAAACGCCGT~~
~~GCTGTCGGTGAATCCGAACCTGCTCATTTTCGTCGAAGGTGTGCAGAGCTACAACGG~~
~~AGACTCCTACTGGTGGGGCGGCAACCTGCAAGGAGCCGGCCAGTACCCGGTCGTGC~~
~~TGAACGTGCCGAACCGCCTGGTGTACTCGGCGCACGACTACGCGACGAGCGTCTAC~~
~~CCGCAGACGTGGTTCAGCGATCCGACCTTCCCCAACAACATGCCCGGCATCTGGAAC~~
~~AAGAACTGGGGATACCTCTTCAATCAGAACATTGCACCGGTATGGCTGGGCGAATTC~~
~~GGTACGACACTGCAATCCACGACCGACCAGACGTGGCTGAAGACGCTCGTCCAGTA~~
~~CCTACGGCCGACCGCGCAATACGGTGCCGGACAGCTTCGAGTGGACGTTCTGGTCCTG~~
~~GAACCCCGATTCCGGCGACACAGGAGGAATTGTCAAGGATGACTGGCAGACGGTCG~~
~~ACACAGTAAAAGACGGCTATCTCGCGCCGATCAAGTCGTCGATTTTCGATCCTGTCT~~
~~AATGAATCGCCTAGCAGTCAACCGTCCCCGTCGGTGTCGCCGTCTCCGTCGCCGAGC~~
~~CCGTCGGCGAGTCGGACGCCGACGCCTACTCCGACGCCGAGAGCCAGCCCGACGCC~~

~~AACGCTGACCCCTACTGCTACGCCCACGCCCACGGCAAGCCCGACGCCGTCACCGA~~

~~CGGCAGCCTCCGGAGCCCGCTGCACCGCGAGTTACCAGGTCAACAGCGATTGGGGC~~

~~AATGGCTTCACGGTAACGGTGGCCGTGACAAATTCCG~~

AGGGYWHTSG REILDANNVP VRIAGINWFG FETCNYVVHG LWSRDYRSML DQIKSLGYNT 60
IRLPYSDDIL KPGTMPNSIN FYQMNQDLQG LTSLQVMDKI VAYAGQIGLR IILDRHRPDC 120
SGQSALWYTS SVSEATWISD LQALAQRYKG NPTVVGFDLH NEPHDPACWG CGDPSIDWRL 180
AAERAGNAVL SVNPNLLIFV EGVQSYNGDS YWWGGNLQGA GQYPVVLNVP NRLVYSAHDY 240
ATSVGPQTWF SDPTFPNNMP GIWNKNWGYL FNQNIAPVWL GEFGTTLQST TDQTWLKTLV 300
QYLRPTAQYG ADSFQWTFWS WNPDSGDTGG ILKDDWQTVD TVKDGYLAPI KSSIFDPV 358
SEQ ID NO. 2;

AGGGYWHTSG REILDANNVP VRIAGINWFG FETCNYVVHG LRSRDYRSML DQIKSLGYNT 60
IRLPYSDDIL KPGTMPNSIN FYQMNQDLQG LTSLQVMDKI VAYAGQIGLR IILDRHRPDC 120
SGQSALWYTS SVSEATWISD LQALAQRYKG NPTVVGFDLH NEPHDPACWG CGDPSIDWRL 180
AAERAGNAVL SVNPNLLIFV EGVQSYNGDS YWWGGNLQGA GQYPVVLNVP NRLVYSAHDY 240
ATSVYPQTWF SDPTFPNNMP GIWNKNWGYL FNQNIAPVWL GEFGTTLQST TDQTWLKTLV 300
QYLRPTAQYG ADSFQWTFWS WNPDSGDTGG ILKDDWQTVD TVKDGYLAPI KSSIFDPV 358

SEQ ID NO. 3;

and

AGGGYWHTSG REILDANNVP VRIAGINWFG FETCNYVVHG LWSRDYRSML DQIKSLGYNT 60
IRLPYSDDIL KPGTMPNSIN FRQMNQDLQG LTSLQVMDKI VAYAGQIGLR IILDRHRPDC 120
SGQSALWYTS SVSEATWISD LQALAQRYKG NPTVVGFDLH NEPHDPACWG CGDPSIDWRL 180
AAERAGNAVL SVNPNLLIFV EGVQSYNGDS YWWGGNLQGA GQYPVVLNVP NRLVYSAHDY 240
ATSVYPQTWF SDPTFPNNMP GIWNKNWGYL FNQNIAPVWL GEFGTTLQST TDQTWLKTLV 300
QYLRPTAQYG ADSFQWTFWS WNPDSGDTGG ILKDDWQTVD TVKDGYLAPI KSSIFDPV 358
SEQ ID NO. 4 ; or a mixture thereof.

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled).

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Currently Amended) A method for increasing the specific activity of Acidothermus cellulolyticus of E1 endoglucanase containing a glycosyl hydrolase site to form a mutated glycosyl hydrolase for use on a biomass substrate, comprising replacing, by site-directed-mutagenesis, an active site associated glycosyl-stabilizing amino acid of the E1 endoglucanase with an amino acid~~, the replacing amino acid binding~~ that binds cellobiose less tightly than the glycosyl-stabilizing amino acid to provide a mutant EI endoglucanase; said glycosyl-stabilizing amino acid is selected from the group consisting of tryptophan, phenylalanine and tyrosine, and the replacing amino acid is selected from the group consisting of alanine, valine, serine, glutamic acid, arginine and glycine~~.~~; wherein said active or mutant site is

selected from tryptophan 30, 39, 171, 181, 212 and 259; phenylalanine 229 and 258; and tyrosine 245.

30. (Cancelled)

31. (Currently Amended) The method of claim 29, wherein the mutant endoglucanse is selected from the group consisting of:

~~GCGGGCGGCGGCTATTGGCACACCGAGCCGGCCGGGAGATCCTGGACGCCGAACAACGT GCCGGTACCGATCGCCCGGCATCAACTGGTTTGGGTTCGAAACCTGCAATTACGTCGT GCACGGTCTCTGGTCACGCGACTACCGCAGCATGCTCGACCAGATAAAGTCGCTCGG CTACAACACAATCCGGCTGCCGTACTCTGACGACATTCTCAAGCCGGGCACCATGCC GAACAGCATCAATTTTTACCAGATGAATCAGGACCTGCAGGGTCTGACGTCCTTGCA GGTGATGGACAAAATCGTCGCGTACGCCGGTCAGATCGGCCTGCCGCATCATTCTTGA CCGCCACCGACCGGATTGCAGCGGGCAGTCGGCGCTGTGGTACACGAGCAGCGTCT CGGAGGCTACGTGGATTTCCGACCTGCAAGCGCTGGCCGCAGCGCTACAAGGGAAAC CCGACGGTCGTCGGCTTTGACTTGCACAACGAGCCGCATGACCCGGCCTGCTGGGGC TGCGGCGATCCGAGCATCGACTGGCGATTGGCCGCCGAGCGGGCCGGAAACGCCGT GCTCTCGGTGAATCCGAACCTGCTCATTTTCGTCGAAGGTGTGCAGAGCTACAACGG AGACTCCTACTGGTGCGGCCGGCAACGTGCAAGGAGCCGGCCAGTACCCGGTCGTGC TGAACGTGCCGAACCGCCTGGTGTACTCGGCGCACGACTACGCGACGAGCGTCGGC CCGCAGACGTGGTTCAGCGATCCGACCTTCCCCAACAACATGCCCGGCATCTGGAAC AAGAACTGGGGATACCTCTTCAATCAGAACATTGCACCGGTATGGCTGGGCGAATTC GGTACGACACTGCAATCCACGACCGACCAGACGTGGCTGAAGACGCTCGTCCAGTA CGTACGGCCGACCGCGCAATACGGTGCCGACAGGTTCCAGTGGACCTTCTGGTCCTG GAACCCCGATTCCGGCGACACAGGAGGAATTCTGAAGGATGACTGGCAGACGGTCG~~

~~ACACAGTAAAAGACGGCTATCTCGCGCCGATCAAGTCGTCGATTTTCGATCCTGTCT~~
~~AATGAATCGCCTAGCAGTCAACCGTCCCCGTCGGTGTCGCCGTCTCCGTCGCCGAGC~~
~~CCGTCGGCGAGTCGGACGCCGACGCCTACTCCGACGCCGACAGCCAGCCCGACGCC~~
~~AACGCTGACCCCTACTGCTACGCCCACGCCCACGGCAAGCCCGACGCCGTCACCGA~~
~~CGGCAGCCTCCGGAGCCCGCTGCACCGCGAGTTACCAGGTCAACAGCGATTGGGGC~~
~~AAT,~~

~~GCGGGCGGCGGCTATTGGCACACGAGCGGCCGGGAGATCCTGGACGCGAACAACGT~~
~~GCCGGTACGGATCGCCGGCATCAACTGGTTTGGGTTCGAAACCTGCAATTACGTCGT~~
~~GCACGGTCTCCGGTCACGCGACTACCGCAGCATGCTCGACCAGATAAAGTCGCTCG~~
~~GCTACAACACAATCCGGCTGCCGTACTCTGACGACATTCTCAAGCCGGGCACCATGC~~
~~CGAACAGCATCAATTTTTACCAGATGAATCAGGACCTGCAGGGTCTGACGTCCTTGC~~
~~AGGTCATGGACAAAAATCGTCGCGTACGCCCGGTCAGATCGGCCTGCGCATCATTCTTG~~
~~ACCGCCACCGACCGGATTGCAGCGGGCAGTCGGCGCTGTGGTACACGAGCAGCGTC~~
~~TCGGAGGCTACGTGGATTTCCGACCTGCAAGCGCTGGCGCAGCGCTACAAGGGAAA~~
~~CCCGACGGTCGTCGGCTTTGACTTGCACAACGAGCCGCATGACCCGGCCTGCTGGGG~~
~~CTGCGGCGATCCGAGCATCGACTGGCGATTGGCCGCCGAGCGGGCCGGAAACGCCG~~
~~TGCTCTCGGTGAATCCGAACCTGCTCATTTTCGTCGAAGGTGTGCAGAGCTACAACG~~
~~GAGACTCCTACTGGTGGGGCGGCAACCTGCAAGGAGCCGGCCAGTACCCGGTCGTG~~
~~CTGAACGTGCCGAACCGCCTGGTGTACTCGGCGCACGACTACGCGACGAGCGTCTA~~
~~CCCGCAGACGTGGTTCAGCGATCCGACCTTCCCCAACAACATGCCCGGCATCTGGAA~~
~~CAAGAACTGGGGATACCTCTTCAATCAGAACATTGCACCGGTATGGCTGGGCGAATT~~
~~CGGTACGACACTGCAATCCACGACCGACCAGACGTGGCTGAAGACGCTCGTCCAGT~~

~~ACCTACGGCCGACCGCGGCAATACGGTGCGGACAGCTTCGAGTGGACGTTCTGGTCCT~~

~~GGAACCCCGATTCCGGCGACACAGGAGGAATTCTCAAGGATGACTGGCAGACGGTC~~

~~GACACAGTAAAAGACGGCTATCTCGCGCCGATCAAGTCGTCGATTTTCGATCCTGTC~~

~~TAATGAATCGCCTAGCAGTCAACCGTCCCCGTCGGTGTCGCCGTCTCCGTCGCCGAG~~

~~CCCGTCGGCGAGTCGGACGCCGACGCGTACTCCGACGCCGACAGCCAGCCCGACGC~~

~~GAACGCTGACCCCTACTGCTACGCCCACGCCCACGGCAAGCCCGACGCCGTCACCG~~

~~ACGGCAGCCTCCGGAGCCCGCTGCACCGCGAGTTACCAGGTCAACAGCGATTGGGG~~

~~CAATGGCTTCACGGTAACGGTGGCCGTGACAAATTCCG, and~~

~~GCGGGCGGCGGCTATTGGCAGACGGAGCGGCCGGGAGATCCTGGACGCGAACAACGT~~

~~GCCGGTACGGATCGCCGGCATGAAGTGGTTTGGCGTTCGAAACCTGCAATTACGTCGT~~

~~GCACGGTCTCTGGTCACGCGACTACCGCAGCATGCTCGACCAGATAAAGTCGCTCGG~~

~~CTACAACACAATCCGGCTGCCGTACTCTGACGACATTCTCAAGCCGGGCACCATGCC~~

~~GAACAGCATCAATTTTCGGCAGATGAATCAGGACCTGCAGGGTCTGACGTCCTTGCA~~

~~GGTCATGGACAAAATCGTCGCGTACGCCCGGTCAGATCGGCGCTGCGCATCATTCTTGA~~

~~CCGCCACCGACCGGATTGCAGCGGGCAGTCGGCGCTGTGGTACACGAGCAGCGTCT~~

~~CGGAGGCTACGTGGATTTCCGACCTGCAAGCGCTGGCGCAGCGCTACAAGGGAAAC~~

~~CCGACGGTCGTCGGCTTTGACTTGCACAACGAGCCGCATGACCCGGCCTGCTGGGGC~~

~~TGCGGCGATCCGAGCATCGACTGGCGATTGGCCGCCGAGCGGGCGGGAAACGCCGT~~

~~GCTCTCGGTGAATCCGAACCTGCTCATTTTCGTCGAAGGTGTGCAGAGCTACAACGG~~

~~AGACTCCTACTGGTGGGGCGGCAACCTGCAAGGAGCCGGCCAGTACCCGGTCGTGC~~

~~TGAACGTGCCGAACCGCCTGGTGTACTCGGCGCACGACTACGCGACGAGCGTCTAC~~

~~CCGCAGACGTGGTTCAGCGATCCGACCTTCCCCAACAACATGCCCGGCATGTGGAAC~~

~~AAGAACTGGGGATACCTCTTCAATCAGAACATTGCACCGGTATGGCTGGGCGAATTC~~

~~GGTACGACACTGCAATCCACGACCGACCAGACGTCGCTGAAGACGGCTCGTCCAGTA~~

~~CCTACGGCCGACCGCGCAATACGGTGCGGACAGCTTCCAGTGGACCTTCTGGTCCTG~~

~~GAACCCCGATTCCGGCGACACAGGAGGAATTCTCAAGGATGACTGGCAGACGGTCG~~

~~ACACAGTAAAAGACGGCTATCTCGCGCCGATCAAGTCGTCGATTTTCGATCCTGTCT~~

~~AATGAATCGCCTAGCAGTCAACCGTCCCCGTCGGTGTCGCCGTCTCCGTCGCCGAGC~~

~~CCGTCGGCGAGTCGGACGCCGACGCCTACTCCGACGCCGACAGCCAGCCCCGACGCC~~

~~AACGCTGACCCCTACTGCTACGCCCACGCCCACGGCAAGCCCCGACGCCGTCACCGA~~

~~CGGCAGCCTCCGGAGCCCCGCTGCACCGCGAGTTACCAGGTCAACAGCGATTGGGGC~~

~~AATGGCTTCACGGTAACGGTGGCCGTGACAAATTCCG~~

AGGGYWHTSG	REILDANNVP	VRIAGINWFG	FETCNYVVHG	LWSRDYRSML	DQIKSLGYNT	60
IRLPYSDDIL	KPGTMPNSIN	FYQMNQDLQG	LTSLQVMDKI	VAYAGQIGLR	IILDRHRPDC	120
SGQSALWYTS	SVSEATWISD	LQALAQRYKG	NPTVVGFDLH	NEPHDPACWG	CGDPSIDWRL	180
AAERAGNAVL	SVNPNLLIFV	EGVQSYNGDS	YWWGGNLQGA	GQYPVVLNVP	NRLVYSAHDY	240
ATSVGPQTWF	SDPTFPNNMP	GIWNKNWGYL	FNQNIAPVWL	GEFGTTLQST	TDQTWLKTLV	300
QYLRPTAQYG	ADSFQWTFWS	WNPDSGDTGG	ILKDDWQTVD	TVKDGYLAPI	KSSIFDPV	358

SEQ ID NO. 2;

AGGGYWHTSG	REILDANNVP	VRIAGINWFG	FETCNYVVHG	LRSRDYRSML	DQIKSLGYNT	60
IRLPYSDDIL	KPGTMPNSIN	FYQMNQDLQG	LTSLQVMDKI	VAYAGQIGLR	IILDRHRPDC	120
SGQSALWYTS	SVSEATWISD	LQALAQRYKG	NPTVVGFDLH	NEPHDPACWG	CGDPSIDWRL	180
AAERAGNAVL	SVNPNLLIFV	EGVQSYNGDS	YWWGGNLQGA	GQYPVVLNVP	NRLVYSAHDY	240
ATSVYPQTWF	SDPTFPNNMP	GIWNKNWGYL	FNQNIAPVWL	GEFGTTLQST	TDQTWLKTLV	300
QYLRPTAQYG	ADSFQWTFWS	WNPDSGDTGG	ILKDDWQTVD	TVKDGYLAPI	KSSIFDPV	358

SEQ ID NO. 3;

and

AGGGYWHTSG	REILDANNVP	VRIAGINWFG	FETCNYVVHG	LWSRDYRSML	DQIKSLGYNT	60
IRLPYSDDIL	KPGTMPNSIN	FRQMNQDLQG	LTSLQVMDKI	VAYAGQIGLR	IILDRHRPDC	120
SGQSALWYTS	SVSEATWISD	LQALAQRYKG	NPTVVGFDLH	NEPHDPACWG	CGDPSIDWRL	180
AAERAGNAVL	SVNPNLLIFV	EGVQSYNGDS	YWWGGNLQGA	GQYPVVLNVP	NRLVYSAHDY	240
ATSVYPQTWF	SDPTFPNNMP	GIWNKNWGYL	FNQNIAPVWL	GEFGTTLQST	TDQTWLKTLV	300
QYLRPTAQYG	ADSFQWTFWS	WNPDSGDTGG	ILKDDWQTVD	TVKDGYLAPI	KSSIFDPV	358

SEQ ID NO. 4 ; or a mixture thereof.

~~AAGAACTGGGGATACCTCTTCAATCAGAACATTGCACCGGTATGGCTGGGCGAATTC~~

~~GGTACGACACTGCAATCCACGACCGACCAGACGTGGCTGAAGACGCTCGTCCAGTA~~

~~CCTACGGCCGACCGCGCAATACGGTGCGGACAGCTTCCAGTGGACCTTCTGGTCCTG~~

~~GAACCCCGATTCCGGCGACACAGGAGGAATTCTCAAGGATGACTGGCAGACGGTCG~~

~~ACACAGTAAAAGACGGCTATCTCGCGCCGATCAAGTCGTCGATTTTCGATGCTGTCT~~

~~AATGAATCGGCCTAGCAGTCAACCGTCCGCGTCGGTGTCGCCGTCTCCGTCGCCGAGC~~

~~CCGTCGGCGAGTCGGACGCCGACGCCTACTCCGACGCCGAGAGCCAGCCCGACGCC~~

~~AACGCTGACCCCTACTGCTACGCCCACGCCCACGGCAAGCCCGACGCCGTCACCGA~~

~~CGGCAGCCGTCCGGAGCCCGCTGCACCGCGAGTTACCAGGTCAACAGCGATTGGGGC~~

~~AATGGCTTCACGGTAACGGTGGCCGTGACAAATTCCG~~

AGGGYWHTSG REILDANNVP VRIAGINWFG FETCNYVVHG LWSRDYRSML DQIKSLGYNT 60
IRLPYSDDIL KPGTMPNSIN FYQMNQDLQG LTSLQVMDKI VAYAGQIGLR IILDRHRPDC 120
SGQSALWYTS SVSEATWISD LQALAQRYKG NPTVVGFDLH NEPHDPACWG CGDPSIDWRL 180
AAERAGNAVL SVNPNLLIFV EGVQSYNGDS YWWGGNLQGA GQYPVVLNVP NRLVYSAHDY 240
ATSVGPQTWF SDPTFPNNMP GIWNKNWGYL FNQNIAPVWL GEFGTTLQST TDQTWLKTLV 300
QYLRPTAQYG ADSFQWTFWS WNPDSGDTGG ILKDDWQTVD TVKDGYLAPI KSSIFDPV 358
SEQ ID NO. 2;

AGGGYWHTSG REILDANNVP VRIAGINWFG FETCNYVVHG LRSRDYRSML DQIKSLGYNT 60
IRLPYSDDIL KPGTMPNSIN FYQMNQDLQG LTSLQVMDKI VAYAGQIGLR IILDRHRPDC 120
SGQSALWYTS SVSEATWISD LQALAQRYKG NPTVVGFDLH NEPHDPACWG CGDPSIDWRL 180
AAERAGNAVL SVNPNLLIFV EGVQSYNGDS YWWGGNLQGA GQYPVVLNVP NRLVYSAHDY 240
ATSVYPQTWF SDPTFPNNMP GIWNKNWGYL FNQNIAPVWL GEFGTTLQST TDQTWLKTLV 300
QYLRPTAQYG ADSFQWTFWS WNPDSGDTGG ILKDDWQTVD TVKDGYLAPI KSSIFDPV 358

SEQ ID NO. 3;

and

AGGGYWHTSG REILDANNVP VRIAGINWFG FETCNYVVHG LWSRDYRSML DQIKSLGYNT 60
IRLPYSDDIL KPGTMPNSIN FRQMNQDLQG LTSLQVMDKI VAYAGQIGLR IILDRHRPDC 120
SGQSALWYTS SVSEATWISD LQALAQRYKG NPTVVGFDLH NEPHDPACWG CGDPSIDWRL 180
AAERAGNAVL SVNPNLLIFV EGVQSYNGDS YWWGGNLQGA GQYPVVLNVP NRLVYSAHDY 240
ATSVYPQTWF SDPTFPNNMP GIWNKNWGYL FNQNIAPVWL GEFGTTLQST TDQTWLKTLV 300
QYLRPTAQYG ADSFQWTFWS WNPDSGDTGG ILKDDWQTVD TVKDGYLAPI KSSIFDPV 358
SEQ ID NO. 4 ; or a mixture thereof.